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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,945	01/17/2006	Richard Wu	CH-7654/MD-02-12-186-ST	2606
157	7590	09/07/2006	EXAMINER	
BAYER MATERIAL SCIENCE LLC			LAVILLA, MICHAEL E	
100 BAYER ROAD			ART UNIT	PAPER NUMBER
PITTSBURGH, PA 15205			1775	

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/542,945	WU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael La Villa	1775	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
  - 4a) Of the above claim(s) 1-18 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 19-29 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 21 July 2005 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20050721.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction is required under 35 U.S.C. 121 and 372.
2. This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.
  3. In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.
  4. Group I, claim(s) 1-18, drawn to a method of making a metal-coated metal graphite composite material.
  5. Group II, claim(s) 19-29, drawn to a metal-coated metal graphite composite material.
  6. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Independent Claim 1 of Group I is anticipated by Smith et al. USPN 5,730,853. Smith et al. teaches a method that comprises removing graphite from a metal graphite composite surface by cleaning and then forming two metal layers on the cleaned surface. See Smith et al. (col. 5, line 45 through col. 7, line 40). Since the only independent claim of Group I is anticipated by the prior art, there can be no special corresponding technical feature for the claim groups and hence the claim groups cannot relate to a single general inventive concept. Therefore, there is lack of unity of invention, and so restriction is appropriate.
  7. During a telephone conversation with Mr. Gil on 24 August 2006 a provisional election was made with traverse to prosecute the invention of Group II, claims 19-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Objections***

9. Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Dependent Claim 23 contemplates that as much as sixty percent of the surface area can contain graphite. Since previous Claim 19 demands that the surface be "substantially free of graphite," it would appear that the presence of sixty percent being covered with graphite is not further limiting.

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

11. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 19-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Regarding Claims 19 and 28, it is unclear what is meant by the phrase “substantially free of graphite.” Dependent Claim 23 contemplates that as much as sixty percent of the surface area can contain graphite. It is unclear therefore what are the metes and bounds of this attribute, as its plain meaning would be expected to require substantial absence of graphite and not substantial presence.

14. Regarding Claim 24, it is unclear what is the antecedent basis of the phrase “the material.” The listed group element appear to list possible metal graphite composite substrates. It is unclear whether “material” should be “substrate.”

15. Regarding Claim 25, it is unclear whether the claimed fiber content is to be measured by volume or by some other physical characteristic.

16. Regarding Claim 27, it is unclear whether the claim means that the intermediate layer is to be formed by zincate treatment or whether the layer is to comprise zincate material.

***Claim Rejections - 35 USC § 102***

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

18. A person shall be entitled to a patent unless –

19. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

20. Claims 19-24, 28, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. USPN 5,730,853. Smith et al. teaches an aluminum graphite composite, whose surface is cleaned by removing graphite therefrom,

following which two metal layers are deposited on the cleaned surface. See Smith et al. (Abstract; Figures 1-8; and col. 5, line 45 through col. 7, line 40).

21. Claim 19-23 and 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Saubestre et al. USPN 3,411,995. Saubestre et al. teaches plating an iron graphite composite with a zinc layer and a chromate layer, wherein the iron graphite composite surface, prior to zinc layer application, is substantially graphite free. See Saubestre et al. (col. 2, lines 45-55; col. 4, line 71 through col. 5, line 40; and col. 10, line 1 through col. 11, line 55). Saubestre et al. teaches that the surface may comprise carboniferous particles. Saubestre et al. does not teach zincate treatment, but the formed zinc layer may be indistinguishable from one formed by zincate treatment. Saubestre et al. may not teach the product-by-process limitations of Claim 28, but the resulting article of Saubestre et al. may be encompassed by those formed by the claimed product-by-process limitations.

#### ***Claim Rejections - 35 USC § 103***

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

24. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. USPN 5,730,853 in view of Cornie et al. USPA 2003/0024611. Smith et al. teaches an aluminum graphite composite, whose surface is cleaned by removing graphite therefrom, following which two metal layers are deposited on the cleaned surface. See Smith et al. (Abstract; Figures 1-8; and col. 5, line 45 through col. 7, line 40). Smith et al. does not exemplify the claimed percentage of graphite fibers. Like Smith et al., Cornie et al. teaches that aluminum graphite composite is useful as heat sink in high performance electronic applications and that aluminum graphite composite is favored for its light weight and easy machinability. Cornie et al. teaches that such composites favorably possess from 15 to 60 percent graphite fiber. See Cornie et al. (paragraphs 16-21 and 106-128). It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the composite of Smith et al. with this favored percentage of graphite fiber in order to take advantage good weight and machinability characteristics of the resulting aluminum graphite composite in high performance electronic applications. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the aluminum graphite composites of Cornie et al. in the metal plating treatment of Smith et al. in order to fabricate heat sink articles suitable for high performance electronic

applications from these materials having favorable light weight and machinability characteristics.

### **CONCLUSION**

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.
26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael La Villa  
5 September 2006

  
MICHAEL E. LAVILLA PH.D.  
PRIMARY EXAMINER